

What is claimed is:

1. A radiation-curable composition comprising:
 - (i) a cationically polymerizable component;
 - (ii) a cationic photoinitiator;
 - (iii) a free radical polymerizable component other than caprolactone acrylate; and
 - (iv) a free radical photoinitiator;wherein the composition, after cure, has a clarity of more than 90%.
2. The composition of claim 1, wherein said free radical polymerizing component is selected from the group consisting of:
 - (a) non-aromatic free radical polymerizable components comprising at least one C₁-C₁₀ ether group; and
 - (b) aromatic free radical polymerizable components comprising more than four C₁-C₁₀ ether groups.
3. The composition of claim 1, wherein said free radical polymerizable component is represented by the following formula (3):



wherein

X represents a branched or unbranched aliphatic group comprising 1-10 carbon atoms;
n represents an integer from 1 to 6;
each R independently represents a branched or unbranched aliphatic group comprising from 1-10 carbon atoms;
each m independently represents an integer from 0-10;
at least one m represents an integer of at least 1; and
each A independently represents a free radical polymerizable group.

4. The composition of claim 1, wherein said free radical polymerizing component is selected from the group consisting of alkoxylated bisphenol A diacrylate, tripropyleneglycol diacrylate, polypropyleneglycol dimethacrylate, alkoxylated neopentylglycol diacrylate,

alkoxylated hexanediol diacrylate, polytetrahydrofuran diacrylate, and alkoxyated trimethylolpropane triacrylate.

5. The composition of claim 1, wherein said free radical polymerizing component component is a diacrylate component.

6. The composition of claim 5, further comprising a free radical polymerizable component having at least three radiation-curable groups.

7. The composition of claim 1, wherein said composition further comprises caprolactone acrylate.

8. A process for producing a three-dimensional object comprising rapid prototyping the composition of claim 1.

9. A three dimensional object obtained by the process of claim 8.

10. A radiation-curable composition comprising:

- (i) a cationically polymerizable component;
- (ii) a first free radical polymerizable component, said first free radical component being selected from the group consisting of
 - (a) non-aromatic free radical polymerizable components comprising at least one C₁-C₁₀ ether group;
 - (b) aromatic free radical polymerizable components comprising more than four C₁-C₁₀ ether groups; and
- (iii) a second free radical polymerizable component other than said first free radical polymerizable component.

wherein said composition, after cure, has a clarity ratio greater than 1.03.

11. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component comprises at least two acrylate groups.

12. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component comprises at least two ethoxy, propoxy, or butoxy groups.

13. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component comprises at least two ethoxy, propoxy, or butoxy groups.

14. The radiation-curable composition of claim 10, wherein said first free radical polymerizable component is selected from the group consisting of alkoxylated bisphenol A diacrylate, tripropyleneglycol diacrylate, polypropyleneglycol dimethacrylate, alkoxylated neopentylglycol diacrylate, alkoxylated hexanediol diacrylate, polytetrahydrofuran diacrylate, and alkoxylated trimethylolpropane triacrylate.

15. The radiation-curable composition of claim 10, wherein said radiation-curable composition comprises, relative to the total weight of the composition, more than 2 wt% of said first free radical polymerizable component.

16. The radiation-curable composition of claim 1, wherein said radiation-curable composition comprises, relative to the total weight of the composition, at most 15 wt% of said first free radical polymerizable component.

17. The radiation-curable composition of claim 1, wherein said radiation-curable composition comprises, relative to the total weight of the composition, 3-10 wt% of said first free radical polymerizable component.

18. The radiation-curable composition of claim 1, wherein said cationically polymerizable component is an epoxy resin.

19. The radiation-curable composition of claim 1, wherein said cationically polymerizable component includes a cyclohexene oxide component.

20. The radiation-curable composition of claim 1, further comprising a cationic photoinitiator.

21. The radiation-curable composition of claim 20, wherein said cationic photoinitiator comprises antimonate.

22. The radiation-curable composition of claim 10, further comprising a hydroxy-functional component.

23. The radiation-curable composition of claim 22, wherein said hydroxy-functional component is a polyether polyol.

24. The radiation-curable composition of claim 10, wherein said second free radical polymerizable component comprises at least 5 free radical polymerizable groups.

25. The radiation-curable composition of claim 10, wherein said ratio is greater than 1.07.

26. The radiation-curable composition of claim 10, wherein said ratio is greater than 1.2.

27. The radiation-curable composition of claim 10, wherein said composition, after cure, has a clarity of more than 90%.

28. A process for forming a three-dimensional object comprising rapid prototyping the composition of claim 10.

29. An object formed with the process of claim 28.

30. A process for improving, by a factor more than 1.03, the clarity of a product obtained by curing a radiation-curable hybrid composition, said process comprising:

- adding, prior to said curing, a compatible free radical polymerizable component to said hybrid composition.

31. The process of claim 30, wherein said compatible free radical polymerizable component is selected from the group consisting of

- non-aromatic free radical polymerizable components comprising a C₁-C₁₀ ether group, preferably at least two C₂-C₄ ether groups; and
- aromatic free radical polymerizable components comprising more than four C₁-C₁₀ ether groups, preferably more than four C₂-C₄ ether groups; and
- hydroxyfunctional free radical polymerizable ester components.